WHAT IS CLAIMED IS:

1. A method for retrieving information from a storage medium, comprising:

exposing a first portion of a surface of the storage medium to stimulating light, the stimulating light diffusing in the storage medium under a second portion of the surface adjacent the first portion, the second portion of the surface being shielded from exposure to the stimulating light; and

receiving stimulated light corresponding to the information with at least one detector positioned to receive the stimulated light via the second portion of the surface of the storage medium, the stimulated light being released from the storage medium in response to the stimulating light diffused under the second portion of the surface.

2. The method of claim 1 further comprising controlling an intensity of the stimulating light to result in a predetermined distribution of the stimulating light under the second portion of the surface of the storage medium.

3. The method of claim 1 further comprising converting the stimulated light received by the at least one detector to electronic data corresponding to the information.

4. The method of claim 1 wherein the stimulating light is transmitted to the surface of the storage medium using a laser pencil beam, and wherein exposing the first portion of the surface comprises moving the laser pencil beam relative to the surface of the storage medium in two dimensions.

5. The method of claim 4 wherein the at least one detector comprises one photodetector, and wherein receiving the stimulated light comprises moving the photodetector relative to the surface of the storage medium in the two dimensions in a manner corresponding to relative motion between the laser pencil beam and the surface, thereby capturing the stimulated light.

6. The method of claim 4 wherein the laser pencil beam is focused to stimulate one pixel corresponding to the second portion of the surface of the storage medium at a time.

7. The method of claim 1 wherein the stimulating light is transmitted to the surface of the storage medium using an array of light emitting diodes, and wherein exposing the first portion of the surface comprises moving the array of light emitting diodes relative to the surface of the storage medium in one dimension.

8. The method of claim 7 wherein the at least one detector comprises a linear array of photodetectors, and wherein receiving the stimulated light comprises moving the array of photodetectors relative to the surface of the storage medium in the one dimension in a manner corresponding to relative motion between the array of light emitting diodes and the surface, thereby capturing the stimulated light.

9. The method of claim 1 wherein the stimulating light uniformly illuminates the first portion of the surface of the storage medium, and wherein exposing the first portion of the surface comprises exposing successive portions of the surface of the storage medium along at least one dimension.

10. The method of claim 1 further comprising placing the at least one detector in contact with the surface of the storage medium.

11. The method of claim 1 further comprising placing the at least one detector at a first distance from the surface of the storage medium.

12. The method of claim 1 wherein the storage medium comprises a turbid material.

13. The method of claim 12 wherein the turbid material comprises a storage-phosphor.

14. The method of claim 1 further comprising inhibiting the stimulating light from impinging upon the at least one detector.

15. The method of claim 14 wherein inhibiting the stimulating light comprises interposing a filter between the at least one detector and the surface of the storage medium to filter out the stimulating light.

16. A method for retrieving image information captured in a storage-phosphor plate, comprising:

exposing a first portion of a surface of the storage-phosphor plate to stimulating light using an array of light emitting diodes, the stimulating light diffusing in the storage medium under a second portion of the surface adjacent the first portion, the second portion of the surface being shielded from exposure to the stimulating light; and

receiving stimulated light released from the storage-phosphor plate in response to the stimulating light with a linear array of detectors positioned to receive the stimulated light via the second portion of the surface of the storage-phosphor plate, the stimulated light corresponding to the information.

17. The method of claim 16 wherein exposing the first portion of the surface comprises moving the array of light emitting diodes relative to the surface of the storage-phosphor plate in one dimension, and wherein receiving the stimulated light comprises moving the array of detectors relative to the surface of the storage-phosphor plate in the one dimension in a manner corresponding to relative motion between the array of light emitting diodes and the surface.

18. The method of claim 16 further comprising controlling an intensity of the stimulating light to result in a predetermined distribution of the stimulating light under the second portion of the surface of the storage-phosphor plate.

19. The method of claim 16 further comprising converting the stimulated light to electronic data corresponding to the information.

20. The method of claim 16 further comprising placing the array of detectors in contact with the surface of the storage-phosphor plate.

21. The method of claim 16 further comprising placing the array of detectors at a first distance from the surface of the storage-phosphor plate.

22. The method of claim 16 further comprising inhibiting the stimulating light from impinging upon the array of detectors.

23. The method of claim 22 wherein inhibiting the stimulating light comprises interposing a filter array between the array of detectors and the surface of the storage-phosphor plate.

24. An apparatus operable to store and retrieve information, comprising:

a storage medium operable to capture incident light corresponding to the information;

a stimulating light source operable to expose a first portion of a surface of the storage medium to stimulating light such that the stimulating light diffuses in the storage medium under a second portion of the surface adjacent the first portion, the second portion of the surface being shielded from exposure to the stimulating light; and

at least one detector positioned to receive stimulated light via the second portion of the surface of the storage medium, the stimulated light being released from the storage medium in response to the stimulating light diffused under the second portion of the surface.

25. The apparatus of claim 24 further comprising a cassette enclosure having a form factor corresponding to a standard radiographic film cassette, the cassette enclosure having the storage medium, the stimulating light source, and the at least one detector enclosed therein.

26. The apparatus of claim 24 further comprising circuitry operable to convert the stimulated light received by the at least one detector to electronic data corresponding to the information.

27. The apparatus of claim 24 wherein the stimulating light source is operable to transmit a laser pencil beam, the apparatus further comprising an actuator assembly operable to effect relative motion between the laser pencil beam and the surface of the storage medium in two dimensions.

28. The apparatus of claim 27 wherein the at least one detector comprises one photodetector, and wherein the actuator assembly is further operable to effect relative motion between the photodetector and the surface of the storage medium in the two dimensions in a manner corresponding to the relative motion between the laser pencil beam and the surface.

29. The apparatus of claim 27 wherein the stimulating light source is operable to focus the laser pencil beam to stimulate one pixel corresponding to the second portion of the surface of the storage medium at a time.

30. The apparatus of claim 24 wherein the stimulating light source comprises an array of light emitting diodes, the apparatus further comprising an actuator assembly operable to effect relative motion between the array of light emitting diodes and the surface of the storage medium in one dimension.

31. The apparatus of claim 30 wherein the at least one detector comprises a linear array of photodetectors, and wherein the actuator assembly is further operable to effect relative motion between the array of photodetectors and the surface of the storage medium in the one dimension in a manner corresponding to the relative motion between the array of light emitting diodes and the surface.

32. The apparatus of claim 30 wherein the stimulating light source is operable to stimulate one row of pixels corresponding to the second portion of the surface of the storage medium at a time.

33. The apparatus of claim 24 wherein the at least one detector is in contact with the surface of the storage medium.

34. The apparatus of claim 24 wherein the at least one detector is disposed at a first distance from the surface of the storage medium.

35. The apparatus of claim 24 wherein the storage medium comprises a turbid material.

36. The apparatus of claim 35 wherein the turbid material comprises a storage-phosphor.

37. The apparatus of claim 24 further comprising at least one filter interposed between the at least one detector and the surface of the storage medium and operable to inhibit the stimulating light from impinging upon the at least one detector.

38. The apparatus of claim 24 wherein the at least one detector and the stimulating light source are mechanically coupled together.

39. The apparatus of claim 38 wherein the at least one detector comprises a linear array of photodetectors and the stimulating light source comprises an array of light emitting diodes.

40. The apparatus of claim 39 wherein the linear array of photodetectors and the array of light emitting diodes are configured in a single package.

41. The apparatus of claim 24 further comprising a fiber-optic faceplate interposed between the at least one detector and the surface of the storage medium for transmitting the stimulated light to the at least one detector.

42. The apparatus of claim 41 further comprising a block of optically transmissive material interposed between the stimulating light source and the surface of the storage medium, and in contact with an edge of the fiber-optic faceplate thereby providing protection for the physical integrity thereof.

43. The apparatus of claim 42 wherein the block of optically transmissive material comprises a second fiber-optic faceplate.

44. The apparatus of claim 43 wherein the block of optically transmissive material comprises one of glass and plastic.

45. The apparatus of claim 41 wherein the fiber-optic faceplate comprises a plurality of parallel optical fibers, the optical fibers being disposed at a nonzero angle from a direction normal to the surface of the storage medium.

46. The apparatus of claim 45 wherein the nonzero angle is less than ten degrees.

47. The apparatus of claim 41 further comprising at least one multi-layer interference filter deposited on at least one side of the fiber-optic faceplate for inhibiting the stimulating light from reaching the at least one detector.

48. The apparatus of claim 24 further comprising a fiber-optic faceplate interposed between the stimulating light source and the surface of the storage medium for transmitting the stimulating light to the surface of the storage medium.

49. The apparatus of claim 24 wherein the at least one detector comprises a photosensitive region at an edge of the at least one detector immediately adjacent the first portion of the surface of the storage medium.

50. The apparatus of claim 24 wherein the at least one detector comprises a photosensitive region at a first distance from an edge of the at least one detector immediately adjacent the first portion of the surface of the storage medium.

51. The apparatus of claim 24 wherein the stimulating light source comprises an array of light emitting diodes.

52. The apparatus of claim 51 wherein the array of light emitting diodes comprises a single row of light emitting diodes.

53. The apparatus of claim 51 wherein the array of light emitting diodes comprises multiple adjacent rows of light emitting diodes.

54. The apparatus of claim 24 wherein the at least one detector comprises a plurality of discrete photodetectors.

55. The apparatus of claim 24 wherein the at least one detector comprises an amorphous array of photodetectors.

56. The apparatus of claim 24 wherein the at least one detector comprises at least one charge-coupled device.

57. The apparatus of claim 56 wherein the at least one charge-coupled device is characterized by a nonlinear photosite response.

58. The apparatus of claim 24 wherein the at least one detector comprises at least one CMOS sensor.

59. The apparatus of claim 24 wherein the at least one detector comprises at least one photomultiplier.

60. An x-ray image capture device, comprising:

a storage-phosphor plate operable to capture incident x-rays corresponding to an image;

a stimulating light source operable to expose a first portion of a surface of the storage-phosphor plate to stimulating light such that the stimulating light diffuses in the storage-phosphor plate under a second portion of the surface adjacent the first portion, the second portion of the surface being shielded from exposure to the stimulating light;

a linear array of detectors positioned to receive stimulated light via the second portion of the surface of the storage-phosphor plate and convert the stimulated light to electronic data corresponding to the image, the stimulated light being released from the storage-phosphor plate in response to the stimulating light diffused under the second portion of the surface;

an actuator assembly operable to effect relative motion between the surface of the storage-phosphor plate and each of the stimulating light source and the array of detectors in one dimension; and

a cassette enclosure having a form factor corresponding to a standard radiographic film cassette, the cassette enclosure having the storage-phosphor plate, the stimulating light source, the array of detectors, and the actuator assembly enclosed therein.

61. A storage-phosphor plate operable to capture incident x-rays and release latent image energy in response to stimulating light having a first wavelength on the surface of the storage phosphor plate, the storage-phosphor plate having a thickness and including an energy-absorbing dye for absorbing electromagnetic energy having a wavelength in a range including the first wavelength, the energy-absorbing dye having a concentration in the storage-phosphor plate sufficient to attenuate the stimulating light by at least a factor of five through 75% of the thickness of the plate.

62. The storage-phosphor plate of claim 61 wherein the energy-absorbing dye comprises a red-absorbing dye.

63. The storage-phosphor plate of claim 61 wherein the energy-absorbing dye comprises an infrared-absorbing dye.

64. An apparatus operable to store and retrieve information, comprising:

a storage-phosphor plate operable to capture incident x-rays corresponding to the information, the storage-phosphor plate including a red-absorbing dye for absorbing electromagnetic energy having a wavelength in a range around 680 nm, the red-absorbing dye having a concentration in the storage-phosphor plate sufficient to attenuate stimulating light by at least a factor of five through 75% of the thickness of the plate;

a stimulating light source operable to expose the surface of the storage-phosphor plate to the stimulating light; and

at least one detector positioned to receive stimulated light via the surface of the storage-phosphor plate, the stimulated light being released in response to the stimulating light.

65. A storage-phosphor plate operable to capture incident x-rays corresponding to an image, the storage-phosphor plate being for use with a scanning apparatus for reading the image, the storage-phosphor plate being disposed on a foam layer, the foam layer being for compressing the storage-phosphor plate against the scanning apparatus as the scanning apparatus moves across the storage-phosphor plate.

66. The storage-phosphor plate of claim 65 wherein the scanning apparatus comprises a linear scanning apparatus which effects one dimensional scanning of the storage-phosphor plate, the linear scanning apparatus being secured at opposing edges of the storage-phosphor plate during scanning, the foam layer increasing in thickness toward the center of the storage-phosphor plate.

67. An apparatus operable to store and retrieve information, comprising:

a storage-phosphor plate operable to capture incident x-rays corresponding to the information, the storage-phosphor plate being disposed on a foam layer;

a stimulating light source operable to expose the surface of the storage-phosphor plate to stimulating light; and

at least one detector positioned to receive stimulated light via the surface of the storage-phosphor plate, the stimulated light being released in response to the stimulating light;

wherein the stimulating light source and the at least one detector are part of a scanning apparatus for reading the information, the foam layer being for pressing the storage-phosphor plate against the scanning apparatus as the scanning apparatus moves across the storage-phosphor plate.

68. A fiber-optic transmission medium for transmitting first electromagnetic energy of a first frequency received from a surface and for absorbing second electromagnetic energy of a second frequency received from the surface, the fiber-optic transmission medium comprising a plurality of optical fibers bundled into a fiber-optic plate and configured for placement in close proximity to the surface, each of the optical fibers comprising a cladding and a core, the cladding comprising a low index host glass doped with a rare earth substance,

and the core comprising a high index host glass doped with the rare earth substance, wherein the optical fibers have a transmission characteristic which peaks at the first frequency and an absorption characteristic which peaks at the second frequency.

69. The fiber-optic transmission medium of claim 68 wherein the rare earth substance comprises thulium.

70. The fiber-optic transmission medium of claim 68 wherein the first electromagnetic energy comprises blue light and the second electromagnetic energy comprises red light.

71. The fiber-optic transmission medium of claim 68 wherein the first electromagnetic energy comprises green light and the second electromagnetic energy comprises infrared light.

72. An apparatus operable to store and retrieve information, comprising:

a storage-phosphor plate operable to capture incident x-rays corresponding to the information;

a stimulating light source operable to expose the surface of the storage-phosphor plate to stimulating light;

at least one detector positioned to receive stimulated light via the surface of the storage-phosphor plate, the stimulated light being released in response to the stimulating light; and

a fiber-optic transmission medium for transmitting the stimulated light and for absorbing the stimulating light, the fiber-optic transmission medium comprising a plurality

of optical fibers bundled into a fiber-optic plate and configured for placement in close proximity to the surface, each of the optical fibers comprising a cladding and a core, the cladding comprising a low index host glass doped with a rare earth substance, and the core comprising a high index host glass doped with the rare earth substance, wherein the optical fibers have a transmission characteristic corresponding to the stimulated light and an absorption characteristic corresponding to the stimulating light.

73. A fiber-optic transmission medium for transmitting first electromagnetic energy of a first frequency received from a surface and for absorbing second electromagnetic energy of a second frequency received from the surface, the fiber-optic transmission medium comprising a plurality of optical fibers bundled into a fiber-optic plate and configured for placement in close proximity to the surface, each of the optical fibers comprising a cladding and a core, the cladding comprising a low index host plastic which includes a dye for absorbing the second electromagnetic energy, and the core comprising a high index host plastic which includes the dye.

74. The fiber-optic transmission medium of claim 73 wherein the dye comprises a red-absorbing dye.

75. An apparatus operable to store and retrieve information, comprising:

a storage-phosphor plate operable to capture incident x-rays corresponding to the information;

a stimulating light source operable to expose the surface of the storage-phosphor plate to stimulating light;

at least one detector positioned to receive stimulated light via the surface of the storage-phosphor plate, the stimulated light being released in response to the stimulating light; and

a fiber-optic transmission medium for transmitting the stimulated light and for absorbing the stimulating light, the fiber-optic transmission medium comprising a plurality of optical fibers bundled into a fiber-optic plate and configured for placement in close proximity to the surface, each of the optical fibers comprising a cladding and a core, the cladding comprising a low index host plastic which includes a dye for absorbing the stimulating light, and the core comprising a high index host plastic which includes the dye.

76. A fiber-optic transmission medium for transmitting first electromagnetic energy of a first frequency received from a surface and for attenuating second electromagnetic energy of a second frequency received from the surface, the fiber-optic transmission medium comprising a plurality of optical fibers bundled into a fiber-optic plate and configured for placement in close proximity to the surface, each of the optical fibers comprising a cladding and a core, the cladding comprising a reflective material for reflecting and thereby attenuating the second electromagnetic energy.

77. The fiber-optic transmission medium of claim 76 wherein the core of the optical fibers comprises glass.

78. The fiber-optic transmission medium of claim 76 wherein the core of the optical fibers comprises plastic.

79. An apparatus operable to store and retrieve information, comprising:

a storage-phosphor plate operable to capture incident x-rays corresponding to the information;

a stimulating light source operable to expose the surface of the storage-phosphor plate to stimulating light;

at least one detector positioned to receive stimulated light via the surface of the storage-phosphor plate, the stimulated light being released in response to the stimulating light; and

a fiber-optic transmission medium for transmitting the stimulated light and for attenuating the stimulating light, the fiber-optic transmission medium comprising a plurality of optical fibers bundled into a fiber-optic plate and configured for placement in close proximity to the surface, each of the optical fibers comprising a cladding and a core, the cladding comprising a reflective material for reflecting and thereby attenuating the stimulating light.

80. A front-illuminated charge-coupled device array for generating charge in response to first electromagnetic energy of a first frequency incident on a surface of the array, the array comprising an interference coating on the surface of the array for increasing the extrinsic quantum efficiency of the array with respect to the first electromagnetic energy by reducing reflection of the first electromagnetic energy from the surface.

81. The charge-coupled device of claim 80 wherein the interference coating comprises a multi-layer coating.

82. The charge-coupled device of claim 80 wherein the interference coating comprises haffnium oxide.

83. The charge-coupled device array of claim 80 wherein the interference coating also decreases the extrinsic quantum efficiency of the array with respect to second electromagnetic energy of a second frequency by increasing reflection of the second electromagnetic energy from the surface.

84. An apparatus operable to store and retrieve information, comprising:

a storage-phosphor plate operable to capture incident x-rays corresponding to the information;

a stimulating light source operable to expose the surface of the storage-phosphor plate to stimulating light; and

a front-illuminated charge-coupled device array for generating charge in response to incidence of stimulated light on a surface of the array, the stimulated light being released in response to the stimulating light, the array comprising an interference coating on the surface of the array for increasing the extrinsic quantum efficiency of the array with respect to the first electromagnetic energy by reducing reflection of the first electromagnetic energy from the surface.

85. A charge-coupled device array for generating charge in response to electromagnetic energy incident on the array, the array having a multi-pinned phase output register which is operable in a burst mode to reduce a dark current associated with the array.

86. An apparatus operable to store and retrieve information, comprising:

a storage-phosphor plate operable to capture incident x-rays corresponding to the information;

a stimulating light source operable to expose the surface of the storage-phosphor plate to stimulating light; and

a charge-coupled device array for generating charge in response to incidence of stimulated light on a surface of the array, the stimulated light being released in response to the stimulating light, , the array having a multi-pinned phase output register which is operable in a burst mode to reduce a dark current associated with the array.

87. A linear charge-coupled device array for generating charge in response to electromagnetic energy incident on the array, the array being one photosite element wide and having a readout amplifier associated therewith for amplifying the charge, the readout amplifier comprising a single-stage transistor amplifier.

88. An apparatus operable to store and retrieve information, comprising:

a storage-phosphor plate operable to capture incident x-rays corresponding to the information;

a stimulating light source operable to expose the surface of the storage-phosphor plate to stimulating light; and

a linear charge-coupled device array for generating charge in response to incidence of stimulated light on a surface of the array, the stimulated light being released in response to the stimulating light, the array being one photosite element wide and having a readout amplifier associated therewith for amplifying the charge, the readout amplifier comprising a single-stage transistor amplifier.

89. A charge-coupled device array for generating charge in response to electromagnetic energy incident on the array, the array comprising first row of first storage

elements and a second row of second storage elements adjacent the first row, the first storage elements having a first width and the second storage elements having a second width greater than the first width, each of the first storage elements corresponding to one of the second storage elements, the charge-coupled device array further comprising a first shift register for collecting a first portion of the charge generated in the first row and a second shift register for collecting a second portion of the charge generated in the second row.

90. A method for reading the charge generated in the charge-coupled device array of claim 90 comprising:

reading the first portion of the charge from the first row using the first shift register;

reading the second portion of the charge from the second row using the second shift register; and

for each of the first storage elements,

comparing a corresponding part of the first portion of the charge to a threshold value;

where the corresponding part of the first portion of the charge exceeds the threshold value, discarding a corresponding part of the second portion of the charge from the corresponding second storage element, and

where the corresponding part of the first portion of the charge is less than the threshold value, combining the corresponding part of the first portion of the charge with the corresponding part of the second portion of the charge from the corresponding second storage element.

91. An apparatus operable to store and retrieve information, comprising:

a storage-phosphor plate operable to capture incident x-rays corresponding to the information;

a stimulating light source operable to expose the surface of the storage-phosphor plate to stimulating light; and

a charge-coupled device array for generating charge in response to incidence of stimulated light on a surface of the array, the stimulated light being released in response to the stimulating light, the array comprising first row of first storage elements and a second row of second storage elements adjacent the first row, the first storage elements having a first width and the second storage elements having a second width greater than the first width, each of the first storage elements corresponding to one of the second storage elements, the charge-coupled device array further comprising a first shift register for collecting a first portion of the charge generated in the first row and a second shift register for collecting a second portion of the charge generated in the second row.

92. A charge-coupled device array for generating charge in response to electromagnetic energy incident on the array, the array comprising a single row of storage elements, the storage elements comprising first storage elements having a first width and second storage elements having a second width greater than the first width, the single row of storage elements comprising alternating ones of the first and second storage elements, the charge-coupled device array further comprising a shift register for collecting the charge generated in the row of storage elements.

93. A method for reading the charge generated in the charge-coupled device array of claim 92 comprising:

reading the charge from the single row of storage elements using the shift register; and

for each of the first storage elements,

comparing a first portion of the charge to a threshold value;

where the first portion of the charge exceeds the threshold value, discarding a second portion of the charge from an adjacent second storage element, and

where the first portion of the charge is less than the threshold value, combining the first portion of the charge with the second portion of the charge from the adjacent second storage element.

94. An apparatus operable to store and retrieve information, comprising:

a storage-phosphor plate operable to capture incident x-rays corresponding to the information;

a stimulating light source operable to expose the surface of the storage-phosphor plate to stimulating light; and

a charge-coupled device array for generating charge in response to incidence of stimulated light on a surface of the array, the stimulated light being released in response to the stimulating light, the array comprising a single row of storage elements, the storage elements comprising first storage elements having a first width and second storage elements having a second width greater than the first width, the single row of storage elements comprising alternating ones of the first and second storage elements, the charge-coupled device array further comprising a shift register for collecting the charge generated in the row of storage elements.

95. A method for collecting electromagnetic energy released from a storage medium using an array of photodetectors, comprising:

collecting portions of the electromagnetic energy from successive rectilinear portions of the storage medium with the array of photodetectors, a center of each rectilinear portion of the storage medium being separated by a sampling pitch;

for each rectilinear portion of the storage medium,

comparing the collected portion of the electromagnetic energy to at least one threshold value; and

adjusting the sampling pitch for the next rectilinear portion of the storage medium based on the comparing.

96. The method of claim 95 wherein the at least one threshold value includes a low signal level threshold value, and the sampling pitch is increased if the portion of the electromagnetic energy is less than the low signal level threshold value.

97. The method of claim 95 wherein the at least one threshold value includes a high signal level threshold value, and the sampling pitch is decreased if the portion of the electromagnetic energy is greater than the high signal level threshold value.

98. A system for collecting electromagnetic energy, comprising:

an array of photodetectors for generating charge in response to incidence of the electromagnetic energy on the array;

an optical transmission medium in close proximity to the array of photodetectors for transmitting the electromagnetic energy to the array of photodetectors; and

an adhesive material for bonding the optical transmission medium to the array of photodetectors, the adhesive material including a dye for absorbing a portion of the electromagnetic energy corresponding to a first frequency.

99. The system of claim 98 wherein the dye comprises a fluorescent material, the adhesive material further comprising additional material for absorbing fluorescent light from the fluorescent material.

100. An integrated x-ray image capture and readout system, comprising:

a cassette enclosure having a form factor corresponding to a standard radiographic film cassette;

a storage-phosphor plate operable to capture incident x-rays corresponding to an image;

a stimulating light source operable to expose a surface of the storage-phosphor plate to stimulating light;

an array of detectors positioned to receive stimulated light via the surface of the storage-phosphor plate, the stimulated light being released from the storage-phosphor plate in response to the stimulating light; and

an actuator assembly operable to effect relative motion between the surface of the storage-phosphor plate and each of the stimulating light source and the array of detectors in one dimension;

wherein the storage-phosphor plate, the stimulating light source, the array of detectors, and the actuator assembly are enclosed in the cassette enclosure.

101. The system of claim 100 further comprising an actuator driver positioned externally to the cassette enclosure and operationally coupled to the actuator assembly via a mechanical link.

102. The system of claim 101 wherein the actuator driver is coupled directly to the cassette enclosure.

103. The system of claim 101 wherein the actuator driver is separate from the cassette enclosure.

104. The system of claim 101 wherein the mechanical link connects the actuator driver and the actuator assembly via an aperture at a corner of the cassette enclosure.

105. The system of claim 104 wherein the mechanical link forms a 135 degree angle with each of two edges of the cassette enclosure joined at the corner.

106. The system of claim 104 wherein the mechanical link is hinged at the corner of the cassette enclosure to allow at least lateral movement of the mechanical link.

107. The system of claim 101 wherein the array of detectors is operable to convert the stimulated light to electronic data corresponding to the image, the system further comprising a transmission medium for transmitting the electronic data out of the cassette enclosure, the transmission medium exiting the cassette enclosure via the aperture.

108. The system of claim 100 wherein the actuator assembly is disposed along an edge of the cassette enclosure to maximize an imaging area of the storage-phosphor plate.

109. The system of claim 100 wherein at least a portion of the actuator assembly comprises a radiolucent material.

110. The system of claim 100 wherein the actuator assembly comprises one of a lead screw, a belt, a magnetic linear motor, and an inchworm motor.

111. The system of claim 100 wherein the array of detectors is operable to convert the stimulated light to electronic data corresponding to the image, the system further comprising a transmission medium for transmitting the electronic data out of the cassette enclosure.

112. The system of claim 100 further comprising a radio frequency detector for detecting radio frequency energy in close proximity to the cassette enclosure, the radio frequency energy corresponding to patient information to be associated with the image.

113. The system of claim 112 further comprising a radio frequency transmitter disposed outside of the cassette enclosure for generating the radio frequency energy.

114. The system of claim 113 wherein the radio frequency transmitter is included in one of a wrist band and a badge.

115. The system of claim 100 further comprising an image capture detection circuitry for sensing whether capture of the incident x-rays is occurring and generating a signal indicative thereof.

116. The system of claim 115 wherein the image capture detection circuitry comprises an x-ray detector for detecting some of the incident x-rays.

117. The system of claim 115 wherein the image capture detection circuitry comprises a photodiode for detection prompt emission of the storage-phosphor plate in response to the incident x-rays.

118. The system of claim 115 wherein the signal is employed to control actuation of the actuator assembly.

119. The system of claim 100 wherein the actuator assembly comprises a magnetic linear motor and the stimulating light source and the array of detectors are configured on a translation stage.

120. The system of claim 119 wherein the magnetic linear motor comprises at least one magnet disposed inside and along an edge of the cassette enclosure, and a linear motor actuator coupled to the translation stage.

121. The system of claim 100 wherein the form factor of the cassette enclosure corresponds to a standard radiographic film cassette having a set of dimensions corresponding to one of 14" x 17", 14" x 14", 10" x 12", 8" x 10", 35 cm x 43 cm, 35 cm x

35 cm, 20 cm x 40 cm, 18 cm x 43 cm, 13 cm x 18 cm, 13 cm x 30 cm, 18 cm x 24 cm, and 24 cm x 30 cm.

122. A radiographic cassette comprising a storage medium for capturing incident x-rays corresponding to an image, and a radio frequency detector for detecting radio frequency energy in close proximity to the cassette enclosure, the radio frequency energy corresponding to patient information to be associated with the image.

123. The system of claim 122 further comprising a radio frequency transmitter disposed outside of the cassette enclosure for generating the radio frequency energy.

124. The system of claim 123 wherein the radio frequency transmitter is included in one of a wrist band and a badge.

125. An integrated x-ray image capture and readout system, comprising:

a cassette enclosure having a form factor corresponding to a standard radiographic film cassette;

a storage-phosphor plate operable to capture incident x-rays corresponding to an image;

a readout assembly for reading the image from the storage-phosphor plate and converting the image to electronic information; and

a transmission circuitry for transmitting the electronic information outside of the cassette enclosure;

wherein the storage-phosphor plate and the readout assembly are enclosed in the cassette enclosure.

126. A method for capturing and reading an x-ray image using the system of claim 125, comprising:

placing the cassette enclosure in an x-ray apparatus for exposure to the incident x-rays;

exposing the storage-phosphor plate to the incident x-rays; and

while the cassette enclosure remains in the x-ray apparatus, reading the electronic information via the transmission circuitry.

127. A charge-coupled device array for generating charge packets in response to electromagnetic energy incident on the array, a photosensitive area of the charge-coupled device comprising a plurality of first regions for storing the charge packets and a plurality of second regions for isolating the charge packets from each other, the second regions occupying at least 60% of the photosensitive area.

128. A charge-coupled device array for generating charge in response to electromagnetic energy incident on the array, the array comprising an output register configured for multi-pinned phase operation and operable in four-phase mode and two-phase mode.

129. A method for reading charge packets generated in a charge-coupled device array comprising a photosensitive area, an output register and a resettable output amplifier comprising:

reading a first charge packet as a first value;

comparing the first value to a threshold value;

where the first value exceeds the threshold value, resetting the output amplifier and reading a second charge packet; and

where the first value is less than the threshold value, combining the second charge packet with the first charge packet by reading the second charge packet without resetting the output amplifier after the first charge packet has been read.